

## EMERGENCY BURNED AREA SEEDING

### 1. SCOPE

This specification provides for immediate cover and re-establishment of vegetation on sites impacted by wildfires. The work shall consist of applying the appropriate revegetation techniques listed below and identified in the SPECIAL PROVISIONS.

### 2. MATERIALS

Seed. All seed shall conform to the current rules and regulations of the Montana Agricultural Seed Act and Administrative Rules.

Seed shall be labeled in accordance with the Montana Agricultural Seed Act and Administrative Rules and the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act. Seed tags attached to seed bag(s) will be evidence of purity and germination. Seed test date must be no older than 12 months prior to planting.

Seed that has become wet, moldy, or otherwise damaged in transit or storage will not be accepted. The percent of noxious weed seed allowable shall be as defined in the Montana Agricultural Seed Act and Administrative Rules. Each species of seed shall be delivered in separate sealed containers and fully tagged.

Inoculants. Legume seed shall be inoculated with the proper, viable symbiotic rhizobia before planting. Seed must be planted within 24 hours of inoculation. If seeds are not incorporated into soil, inoculation is not recommended.

Straw Mulch Materials. Straw mulch shall consist of wheat, barley, or oat straw, hay, or grass cut from native grasses or other plants as specified in the SPECIAL PROVISIONS. Mulch material shall be air dry, reasonably light in color, and shall not be musty, moldy, caked, or otherwise of low quality. Mulch material that contains noxious weeds will not be permitted. The Contractor shall provide a method satisfactory to the Engineer for determining weight of mulch furnished.

Other Mulch Materials. Mulching materials, such as wood cellulose fiber mulch, mulch tackifiers, synthetic fiber mulch, netting, and mesh are other mulching materials that may be required for specialized locations and conditions. These materials, when specified, must be accompanied by the manufacturer's recommendations for methods of application.

Forbs/Shrubs/Trees. Where species such as forbs, shrubs, or trees are required in the form of bare root or containerized plant materials as stated in SPECIAL PROVISIONS the following spacing and plant concentration guidelines will be followed:

Grass/grass-like/forb plugs:  
2' X 2' (11,000/acre)

Shrubs < 4' tall @ maturity:  
4' X 4' (2,720/acre)

Trees/shrubs > 4' tall @ maturity:  
10' X 10' (436/acre)

### 3. SEED MIXTURES AND TIME OF PLANTING

Appropriate seed mixtures, application rate (per acre) and the time of planting shall be implemented as specified in the ITEMS OF WORK AND CONSTRUCTION DETAILS.

Spring seedings. Spring seedings will be completed by May 15. Seedings will be made after May 15 only when there is a minimum of two feet of moist soil. The soil must also be moist to within two inches of the surface. Where soil moisture allows spring seeding after May 15, seedings must be completed by August 15.

Dormant seedings. Dormant seedings can be completed when soil temperatures 2 inches below the soil surface remain at 40° F. or less for ten or more days (approximately October 15).

Species with high counts of dormant seed such as green needlegrass and Indian ricegrass must be planted as a dormant fall seeding unless germination by standard seed test is greater than 50%. If dormant species are a minor component of a mixture, spring seeding is acceptable.

Seed mixtures for west of the Continental Divide and foothills and mountains east of the Continental Divide will be determined based on which "zone" a land unit is associated with. Following are zone descriptions:

Zone 1. Dry, Warm Sites. Open grasslands and woodland benches, at low elevations on all aspects and on south- and west-facing slopes at higher

elevations. This is dry Douglas fir, limber pine, and ponderosa pine habitat types with a significant bunch grass component in the understory.

\*Seed Mix A:

Slender wheatgrass (Pryor)--4 lbs/ac  
Bluebunch wheatgrass--3 lbs/ac  
Thickspike wheatgrass--4 lbs/ac  
Big bluegrass (Sherman)--1 lb/ac

\*Seed Mix B:

Slender wheatgrass--2 lbs/ac  
Pubescent wheatgrass--8 lbs/ac  
Sheep fescue--4 lbs/ac

\*All seed mixtures are in pure live seed.

Zone 2. Moist, Warm Sites. Moderate environments receiving more effective precipitation than the dry, warm sites. Found on north- and east-facing slopes on lower elevations, all aspects at mid-elevations, and on south- and west-facing aspects at higher elevations. Douglas fir and ponderosa pine habitat types.

\*Seed Mix A:

Slender wheatgrass (Pryor)--4 lbs/ac  
Mountain brome--4 lbs/ac  
Streambank wheatgrass--3 lbs/ac  
Big bluegrass (Sherman)--1 lb/ac

\*Seed Mix B:

Perennial ryegrass--3 lbs/ac  
Orchardgrass--4 lbs/ac  
Intermediate wheatgrass--8 lb/ac

\*All seed mixtures are in pure live seed.

Zone 3. Moist, Cool Sites. Found predominantly on north and east-facing slopes at mid-elevations and on all aspects at high elevations. Douglas fir with blue huckleberry in the understory

along with Grand fir, western cedar, western hemlock habitat types.

**\*Seed Mix A:**

Slender wheatgrass (Prior)--4 lbs/ac

Beardless wheatgrass--4 lbs/ac

Mountain brome--4 lbs/ac

Big bluegrass (Sherman)--1 lb/ac

**\*Seed Mix B:**

Tall fescue--4 lb/ac

Timothy--4 lbs/ac

Canada bluegrass--2 lbs/ac

\*All seed mixtures are in pure live seed.

Temporary Cover. Temporary cover that provides cover until perennial vegetation can be established shall consist of spring grains, winter grains, annual ryegrass, or other suitable quick establishing annual vegetation as specified in the SPECIAL PROVISIONS.

Annual ryegrass (not cereal rye) will be planted at 10 pounds per acre. All small grains will be planted at 30 pounds per acre.

The application rate per acre and date of planting shall be completed as shown in the ITEMS OF WORK AND CONSTRUCTION DETAILS. Seed quality shall conform to the current Montana rules and regulations and shall be from the latest crop available.

#### **4. SEEDING, MULCHING, AND STABILIZING**

All seeding operations shall be performed in such a manner that the seed is applied in the specified quantities uniformly on the designated areas. The rate of seed application

shall be as specified in the SPECIAL PROVISIONS.

Seeding Methods. Seeding/planting methods will require broadcasting by aerial application equipment, ground application equipment, or a combination of both. The method(s) of application shall be specified in the SPECIAL PROVISIONS.

The rate, amount, and kind of mulching or mesh shall be as specified. Mulches shall be applied uniformly to the designated areas, and shall be applied to areas seeded not later than two (2) working days after seeding has been performed. Straw mulch material shall be stabilized within twenty-four (24) hours of application by the use of a mulch crimper or equivalent anchoring tool, netting, or by a suitable tackifier. When the mulch crimper or equivalent anchoring tool is used, it shall have straight blades and be the type manufactured expressly for, and capable of firmly punching the mulch into the soil. On sites where the equipment can be safely operated, it shall be operated on the contour. On sites where equipment cannot safely operate to perform the work required, hand methods shall be used as identified.

When deemed appropriate, the tackifier shall be applied uniformly over the mulch material at the specified rate, or by injecting it into the mulch material as it is being applied. Mesh or netting stabilizing materials shall be applied smoothly but loosely on the designated areas, and the edges shall be buried or securely anchored by spikes, staples, rocks, or slash as specified.

The Contractor shall maintain the mesh or netting areas until all work under the contract has been accepted.

Maintenance shall consist of the repair of areas damaged by water erosion, wind, fire, or other causes. Such areas shall be repaired to re-establish the intended condition and to the design lines and grades required by the contract. The areas shall be re-seeded, and re-mulched prior to all new applications of the mesh or netting.

## **5. MEASUREMENT AND PAYMENT**

Method 1 For items of work for which specific unit prices are established in the contract, each area treated will be measured as specified. The seeded area shall be calculated to the nearest 0.1 acre. Payment for treatment will be made at the contract unit price for the designated treatment which will constitute full compensation for completion of the work.

When specified as an item of work, the mesh or netting will be measured to the nearest square yard of surface area covered and accepted. Payment will be made at the contract unit price and will constitute full compensation for completion of the work.

Method 2 For items of work for which specific lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for this item will be made at the contract lump sum price for the item and will constitute full compensation for the completion of the work.

Method 3 For items of work for which lump sum prices are established in the contract, payment will be made as the

work proceeds. Payment of the lump sum contract price will constitute full compensation for completion of the work.

All Methods The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the item(s) to which they are made subsidiary are identified in the construction specifications.